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ABSTRACT

An attempt is made to clarify the aims of critical training in academic subjects at the higher education level. Additionally, common motifs of thought in the extensive material of cognitive criticism are considered, and the material itself is synthesized. Attention is also directed to the criteria of essentiality and implications for teaching. Two important dimensions related to critical training are attitudes and methods. Studies have examined the concepts of independence, tolerance, problem awareness, and intellectual maturity. These concepts are viewed as entailing both psychological and methodological domains. The study of critical practice has been extensive in addressing material concerning historical source criticism, legal technique, the psychology of testimony, the sociology of knowledge, and other areas. In this approach emphasis is placed on insights and methodological ideas whose significance transcends subject boundaries. Certain supporting inquiries have been undertaken concerning medicine, political science, and history. The analysis of historical science has been almost entirely concerned with questions relating to selection and criteria of essentiality. One important consideration in all selection is the attempt to bring the cognitive material under control. It is concluded that a focal point in the analyses has been the link between education and research and the importance of critical training. It is suggested that the choice between the essential and the nonessential is important both to teacher planning and student learning. (SW)

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1980:8

CONCLUDED PROJECT

TITLE OF PROJECT

CRITICAL TRAINING IN HIGHER EDUCATION

CONDUCTED AT

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BACKGROUND AND PURPOSE

The demand for critical training at undergraduate level in higher education can be formulated in various ways, and the several possibilities deserve to be discussed. These problems have attracted a certain amount of attention in research on education, and a summary of the discussion will be found in a study by Jernryd and Svensson, *Kritisk förmåga (Critical ability)*, published in 1974.

This context involves questions of conceptual analysis which are related to a number of different educational ideals. How exactly is critical ability related to independence? How is it related to cooperativeness and generosity? And how is it related to creativity and selective ability?

Methodologically speaking, questions of this kind belong to the discipline which has specially pursued in the Anglo-Saxon countries and is known as the philosophy of education. The leading name in this field is probably that of Israel Scheffler. This branch of Anglo-Saxon philosophy and pedagogics has had relatively little impact on the activities at Swedish universities.

When analysing "critical ability" and kindred ideals, one can adopt the approach which has been developed in the philosophy of education. At the same time there is cause to consider the concrete teaching material involved in training for critical attitudes. Here one can, for example, refer back to current teaching in theoretical philosophy and philosophy of science. One of the primary purposes of the teaching of logic, text analysis and philosophical theory in these subjects is the development of a cognitively critical attitude on the part of the students. Perhaps the approach thus adopted achieved wider currency during the seventies through the "critical theory" of the Frankfurt school and similar radical ideas.

But it must also be observed that other academic subjects contain cognitive material which is of value in critical training. Examples include the source criticism cultivated in the historical sciences, the juridical evaluation of evidence developed at the law faculties, the psychology of testimony, sociological communications theory, the sociology of knowledge, mass media research, and practical statistics. Material from all these fields is germane to training in cognitive criticism.

This is not to say that training in cognitive criticism should include instruction in a motley collection of disciplines. The diversity is less intractable than it might seem at first sight, because there is a similarity of approach - the species of source criticism with which the newspaper reader and the television viewer ought to be familiar does not differ in essence from that which is practised by the historical researcher. It is, however, imperative that the ostensibly heterogeneous material be analysed and adjusted so as to liberate its basic structure.

The present project has been aimed at analysing a wide-ranging material of cognitive criticism available within a series of academic subjects. The investigation has had three purposes which need to be underlined. One of them is a concretization of the aims of critical training. This naturally requires an

interpretation and refinement of the expression "critical training". Another important purpose of the investigation has been to expose common motifs of thought in the extensive material of cognitive criticism and to synthesize the material itself. A third principal purpose concerns the criteria of essentiality and their importance in teaching. Mastering the superabundance of material is a major problem to teachers and students alike. But the rules of selection are abstruse, and analytical work is required in order to make them discernible.

Work has had a practical focus, and the resultant report contains suggested improvements.

CONDUCT

Preparatory studies

During the introductory phase, activities concentrated on an extensive discussion of the concept of critical training. Among other things use was made of a questionnaire procedure, which yielded little. The attitudes revealed towards critical training were mostly distinguished by their lack of pregnancy. Subsequent work was therefore given a more theoretical focus.

In the more specifically conceptual-analytical investigation which came to occupy the centre of attention, activities referred back to the above mentioned study by Jernryd and Svensson and also to the relatively meagre discussion of the concepts of critical ability and indoctrination within the Anglo-Saxon philosophy of education.

The main focus of attention here has been on the idea of critical training as involving two dimensions, one of which is concerned with attitudes and the other with methods. Training implies a personal rapprochement to an ideal achievement level which can be described through the criteria developed within the theory of science. This train of thought has been presented by the project leader in an essay entitled *What is critical ability?* The argument leads to an emphasis of the analogy between psychotherapy and critical training.

Main studies

Following the first, more exploratory phase, the inquiry involved three principal operations: 1) a supplementation of the analytical work of the pilot phase, 2) studies of critical practice in various disciplines and 3) a special study of criteria of essentiality.

1) The discussion was broadened by means of a series of applications of concepts which can be considered related, to a greater or lesser extent, with

the idea of critical training. In a book by the project leader entitled *Nyfikenhetens redskap (The tools of curiosity)* (about which more later), viewpoints are thus presented concerning the concepts of independence, tolerance, problem awareness and intellectual maturity. The last mentioned concept formation is also discussed by the project leader in the essay *Den kontroversiella mogenheten (The controversial concept of maturity)*. One of the main viewpoints in the analysis of these conceptual formations has been the idea that they possess an inward duality, being partly psychological and partly methodological. The general approach has been formulated by the project leader in an essay entitled *Psychomethodological terms.*

On the pedagogical plane, the discussion of the concepts of critical training has been further pursued in a study by Kurt Gestrelius entitled *Kritisk förmåga och vuxenutbildning (Critical ability and adult education)*, the final page of which contains the following summary:
In the discussion pursued here, it has transpired that critical ability can be viewed as an essential part of the overriding goals of adult education. Critical ability as an overriding educational goal is of course motivated in terms of educational ideology and the theory of learning. Furthermore, critical ability has been juxtaposed with the concepts of lifelong learning and education on the basis of self-perceived needs. In this connection it has been shown that critical ability can be seen as an essential part of a system of criteria concerning what is beneficial to the development of lifelong learning. Education on the basis of self-perceived needs makes heavy demands on the students' problem awareness. Problem awareness can easily be shown to be closely connected with critical ability. The demonstration of the connection between self-criticism and critical ability also appears to be highly important.

2) The study of critical practice has assumed the form of a more extensive investigation combined with certain special studies. In the more extensive investigation the project leader has reviewed material concerning historical source criticism, legal technique, the psychology of testimony, the social psychology of rumour, the sociology of knowledge, mass media research, research policy, tradition research, interpretation theory, practical statistics, mathematical heuristics and computer science. The main emphasis of the report has been on insights and methodological ideas whose significance transcends subject boundaries. The material is presented by the project leader in the above mentioned work entitled *Nyfikenhetens*

redskap (The tools of curiosity).

In the course of this work a certain amount of attention was devoted to the relationship between different methodological traditions. A relatively uncomplicated relationship exists when assessments in two different traditions are unanimous. An synthesis can then be educationally effective and can present an opportunity of more abundant exemplification. More interesting from the viewpoint of scientific theory is the situation occurring when the methodological assessment in one research tradition differs from that of another, or appears to do so.

One example of this is the adoption of standpoints concerning the "original probability" of the theme of a testimony adopted in Weibullian source criticism and in the legal assessment of evidence. There is cause here for an analysis to elucidate the fundamental rules which are implicit and which can make the different traditional mutually compatible. A third type of relationship is that existing when methodological reflection has made further progress in one science than it has in another, concerning the assessment of a particular aspect of methodology. Practice in one discipline may then be motivated by the discussion of principles in another. A pertinent example of advanced methodological theory is P O Ekelöf's general theory of the evaluation of evidence, which among other things has a bearing on the study of history.

Parallel to this more extensive investigation, certain supporting inquiries have been undertaken concerning medicine, political science and history. An account in textbook form concerning the medical field has been presented by Germund Hesslow in a work entitled *Medicinsk vetenskapsteori (The philosophy of medicine)*. Hesslow has also pursued certain inquiries regarding the selection of scientific material in the medical field. These have been utilized in the study of essentiality criteria; see point 3, below.

Gunnar Falkemark has processed material from political science. For exemplification purposes he has selected a particular sub-section of political science, namely power research. The results have been presented in two studies: *Maktstudium och värdering (Power research and evaluation)*, and *Två paradigm inom maktforskningen (Two paradigms in power research)*. In the first of these, the analysis focuses on implied normative premises, while in the second the approach has been broadened to include other types of premise as well. This work has been carried out in contact with the Department of Political Science in the University of Gothenburg. Falkemark intends broadening his inquiry still further after the present project has been completed. The two studies mentioned above form the first half of an intended doctoral thesis.

3) The discussion of historical science has been almost entirely concerned with questions relating to selection and criteria of essentiality. In this connection, a great deal of attention has been devoted to the control aspect, one important consideration in all selection being the endeavour to bring the cognitive material under control.

A preliminary discussion of questions of principle has been conducted in two essays presented at a UHÄ conference in Lerum in the autumn of 1978: *Stofföverflöd och väsentlighetsbedömning (Superabundance of subject matter and essentiality assessment)*, and *Kunskapens nycklar (Keys of knowledge)*. The subsequent inquiry has been based on a review of question material from the Department of History in the University of Lund, comprising examination papers and study tasks. The point of departure has been the simple idea that the question material reflects the essentiality criteria of the author of the questions.

The result of the investigation is presented in the publication *Urval och kontroll (Selection and control)*, comprising two separate studies by the project leader. The first of these, *Urvalsproblemet och problemkonstruktionens grammatik (The problem of selection and the grammar of problem construction)*, deals with the teaching competence which is activated when the teacher constructs a test for his pupils. How does he go about building up the questions contained by the test? The answer tested is in the spirit of Noam Chomsky: There is a species of grammar of learning which furnishes the rules of problem construction. This has been developed within the tradition of learning in the same way as the ordinary rules of grammar have evolved within the linguistic tradition, and like them it operates in silence.

In the second of the two studies, *Kontroll över kunskapens innehåll (Control of the content of knowledge)*, a definition is proposed of the concept of "control of knowledge" and a utilitarian yardstick is indicated. This yardstick is employed in a more theoretical investigation of the problems of selection.

SIGNIFICANCE AND PRACTICAL RESULTS

The original practical motive for the project was stated in two UKÄ reports, *Högskolan i framtiden (The future of higher education)*, UKÄ-rapport No. 1973/74:7 a-c and 17, and *Utbildningsplanering för förnyelse (Planning for Change in Higher Education)*, UKÄ-rapport No. 1975:4 and 20 and 1977:1-2, and the pro-

ject itself is based on the statements occurring in these reports concerning the link between education and research and the importance of critical training.

An aim of this kind can be realized in many ways, and a conceptual inquiry indicates the possibilities. One of the interesting points in this context concerns the choice between a more attitude-oriented form of teaching and one which is focused on methodology. The latter is perhaps that which comes closest to the associations aroused by the mention of "critical training". But an initial interpretation of this kind of the import of the concept is too narrow. Reports by the project leader entitled *What is critical ability?* and *Nyfikenhetens redskap (The tools of curiosity)* present arguments in favour of a wider approach implying an acknowledgement of the significance of the attitude component.

One of the points of departure in this project has been the idea that critical insights developed within a tradition of learning may need to be disseminated outside their original field of cultivation. Two of the publications which have been compiled in the course of the project are aimed at facilitating this type of dissemination and have therefore been given the form of textbooks. They are Hesslow's *Medicinsk vetenskapsteori (The philosophy of medicine)* and the project leader's *Nyfikenhetens redskap (The tools of curiosity)*, both of which are intended for use in ordinary university teaching.

Falkemark's essays tie in with questions raised during regular teaching activities in political science. The intention here is for these essays to be of interest to teachers of this subject and to furnish an interesting problematization of the planning of teaching activities in this subject.

One of the purposes of the inquiry concerning the import and function of selective criteria is theoretical. Relatively little attention has been paid in scientific literature to the problems of selection, which at the same time are of manifest practical relevance. The choice between the essential and the inessential is extremely important both to the teacher in his planning and to the student in his learning. It also has a vital bearing on educational quality. The study of essentiality criteria presented in the report *Urval och kontroll (Selection and control)* is also of immediate relevance to questions concerned with educational planning and provides additional arguments for the problem orientation of teaching, the idea being that it will be easier for the student to distinguish between the important and unimportant within a new subject if he is introduced to the rules of problem construction which have been developed in the tradition of learning and which are decisive when the teacher constructs examination

questions.

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1980-10-15

REFERENCES

Jernryd, Elisabeth Svensson, Gunilla (1974) — Kritisk förmåga. En begrepps- och litteraturdiskussion. (Critical ability. A discussion of concepts and literature.) Pedagogisk-psykologiska problem, No. 263, Department of Educational and Psychological Research, Malmö School of Education. (In Swedish)

INTERIM REPORTS

Falkemark, Gunnar (1978) — Maktstudium och värdering. (Power research and evaluation.) Statsvetenskaplig tidskrift 1978, häfte 4. (In Swedish)

Falkemark, Gunnar (1980) — Två paradigm inom maktforskningen. Preliminär version. (Two paradigms in power research. Preliminary version.) Department of Philosophy, University of Lund. (In Swedish)

Gestrelius, Kurt (1978) — Kritisk förmåga och vuxenutbildning. (Critical ability and adult education.) Pedagogisk-psykologiska problem, No. 343, Department of Educational and Psychological Research, Malmö School of Education. (In Swedish)

Halldén, Sören (1978) — Psychomethodological terms. Knowledge and Development, publ. S Schwarz and U Willers, Royal Institute of Technology Library, Stockholm.

Halldén, Sören (1980) — What is critical ability? Th D 60. Philosophical Essays Dedicated to Thorild Dahlquist, Philosophical Studies, No. 32, Department of Philosophy, University of Uppsala.

Halldén, Sören (1980) — Kunskapens nycklar. (Keys of knowledge.) Kunskapssyn och val av innehåll i några högskoleutbildningar. (Conceptions of knowledge and choices of content in some programmes of higher education.) UHÄ-rapport 1980:10.
(In Swedish)

Halldén, Sören (1980) — Stofföverflöd och väsentlighetsbedömning. (Superabundance of subject matter and essentiality assessment.) Kunskapssyn och val av innehåll i några högskoleutbildningar. (Conceptions of knowledge and choices of content in some programmes of higher education.) UHÄ-rapport 1980:10.
(In Swedish)

Halldén, Sören (1980) — Urval och kontroll. (Selection and control.) Studies in Philosophy, Department of Philosophy, University of Lund.
(In Swedish)

Halldén, Sören (1980) — Nyfikenhetens redskap. (The tools of curiosity.) Studentlitteratur, Lund.
(In Swedish)

Halldén, Sören (1981) — Den kontroversiella mogenheten. (The controversial concept of maturity.) Festskrift till Hampus Lyttkens, Doxa, Bodafors.
(In Swedish)

Hesslow, Germund (1979) — Medicinsk vetenskapsteori. (The philosophy of medicine.) Studentlitteratur, Lund.
(In Swedish)